PRELIMINARY BEDROCK GEOLOGIC MAP OF PART OF THE NORTHERN DISTURBED BELT, LEWIS AND CLARK, TETON, PONDERA, GLACIER, FLATHEAD, CASCADE, AND POWELL COUNTIES, MONTANA

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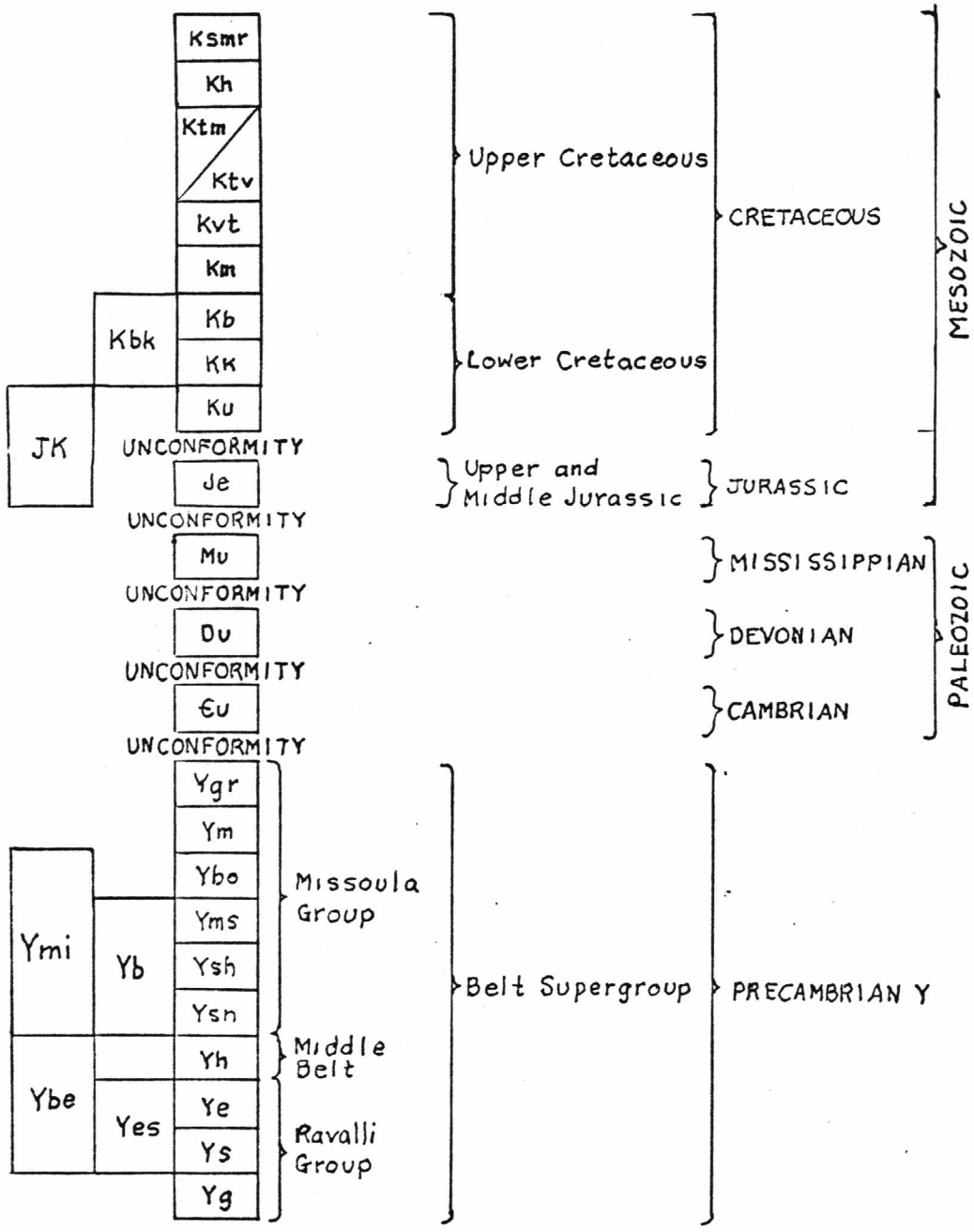
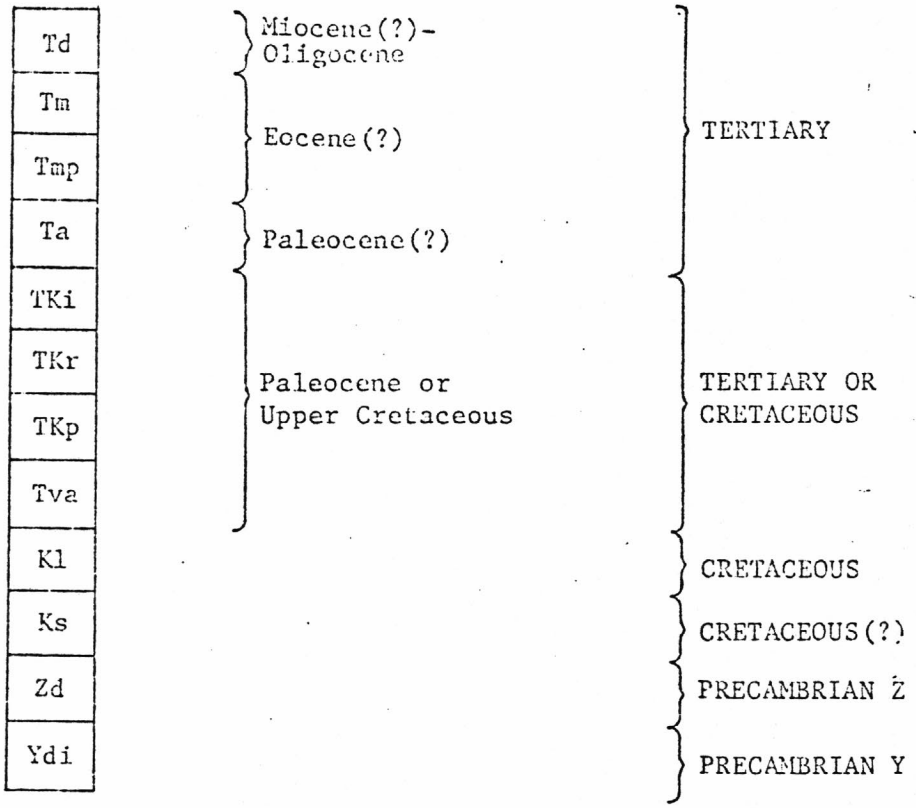
CORRELATION OF MAP UNITS

SEDIMENTARY ROCKS



Note: Xc, Precambrian X crystalline rocks shown only on cross sections

IGNEOUS ROCKS



EXPLANATION

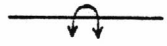
CONTACT


FAULT--Bar and ball on downthrown side


THRUST FAULT--Sawteeth on upper plate


ANTICLINE--Showing direction of plunge


SYNCLINE--Showing direction of plunge


OVERTURNED ANTICLINE--Showing dip of limbs


OVERTURNED SYNCLINE--Showing dip of limbs

STRIKE AND DIP OF BEDS

Inclined


Vertical

Overturned


Horizontal

WELLS


Dry hole


Dry hole, with show of gas


Gas well, abandoned or shut in

EXPLANATION

SEDIMENTARY ROCKS

CRETACEOUS

Ksmr — St. Mary River Formation (Upper Cretaceous)

Kh — Horsethief Sandstone and Horsethief-Bearpaw transitional unit. Locally includes part of Bearpaw Shale

Ktm/Ktv — Two Medicine Formation (Upper Cretaceous). Ktv mapped where volcanic debris and flows are in formation

Kvt — Virgelle Sandstone and Telegraph Creek Formation (Upper Cretaceous)

Km — Marias River Shale (Upper Cretaceous)

Kb — Blackleaf Formation (Lower Cretaceous)

Kk — Kootenai Formation (Lower Cretaceous)

Kbk — Blackleaf and Kootenai Formations (Lower Cretaceous)

Ku — Unnamed formation (Lower Cretaceous)

CRETACEOUS AND JURASSIC

Jk — Lower Cretaceous Blackleaf, Kootenai, and unnamed formations, includes all or parts of Jurassic Morrison, Swift, Rierdon, and Sawtooth Formations

JURASSIC

Je — Ellis Group (Upper and Middle Jurassic), includes Swift, Rierdon, and Sawtooth Formations

PALEOZOIC

Mu — Mississippian rocks, undivided

Du — Devonian rocks, undivided

Cu — Cambrian rocks, undivided

PRECAMBRIAN Y

Belt Supergroup

Ygr — Garnet Range Formation

Ybe — All formations from the McNamara Formation down and including Spokane Formation, undivided

Ymi — Missoula Group Formations from the Bonner Quartzite through Snowslip Formation

Ym — McNamara Formation

Ybo — Bonner Quartzite

Yms — Mount Shields Formation

Ysh — Shepard Formation

Ysn — Snowslip Formation

Yh — Helena Formation

Ye — Empire Formation

Ys — Spokane Formation

Yes — Empire and Spokane Formations

Yg — Greyson Formation

IGNEOUS ROCKS

TERTIARY

Td — Dacite volcanic neck or plug and dikes (Miocene?-Oligocene)

Tm — Hornblende monzonite dikes and sills (Eocene?)--Post-thrust faulting

Tmp — Monzonite porphyry stocks, dikes, and sills (Eocene?)

Ta — Biotite trachyandesite and andesite dikes, sills, and irregular-shaped intrusive bodies (Paleocene?)

TERTIARY OR CRETACEOUS (Pre-thrust faulting)

TKi — Trachyandesite sills

TKr — Rhyolite sills and dikes

TKp — Quartz monzonite porphyry

Tva — Adel Mountain Volcanics of Lyons, 1944 (Paleocene or Upper Cretaceous)

CRETACEOUS

Kl — Latite sill

CRETACEOUS(?)

Ks — Diorite sills

PRECAMBRIAN Z AND Y

Zd — Diorite sills, some dikes--age 750 m.y.

Ydi — Andesite sills--Probably equivalents in age to the Purcell Lava in Glacier National Park which is 1,075 m.y.

Note: Xc, Precambrian X crystalline rocks shown only on cross sections

SOURCES OF GEOLOGIC DATA

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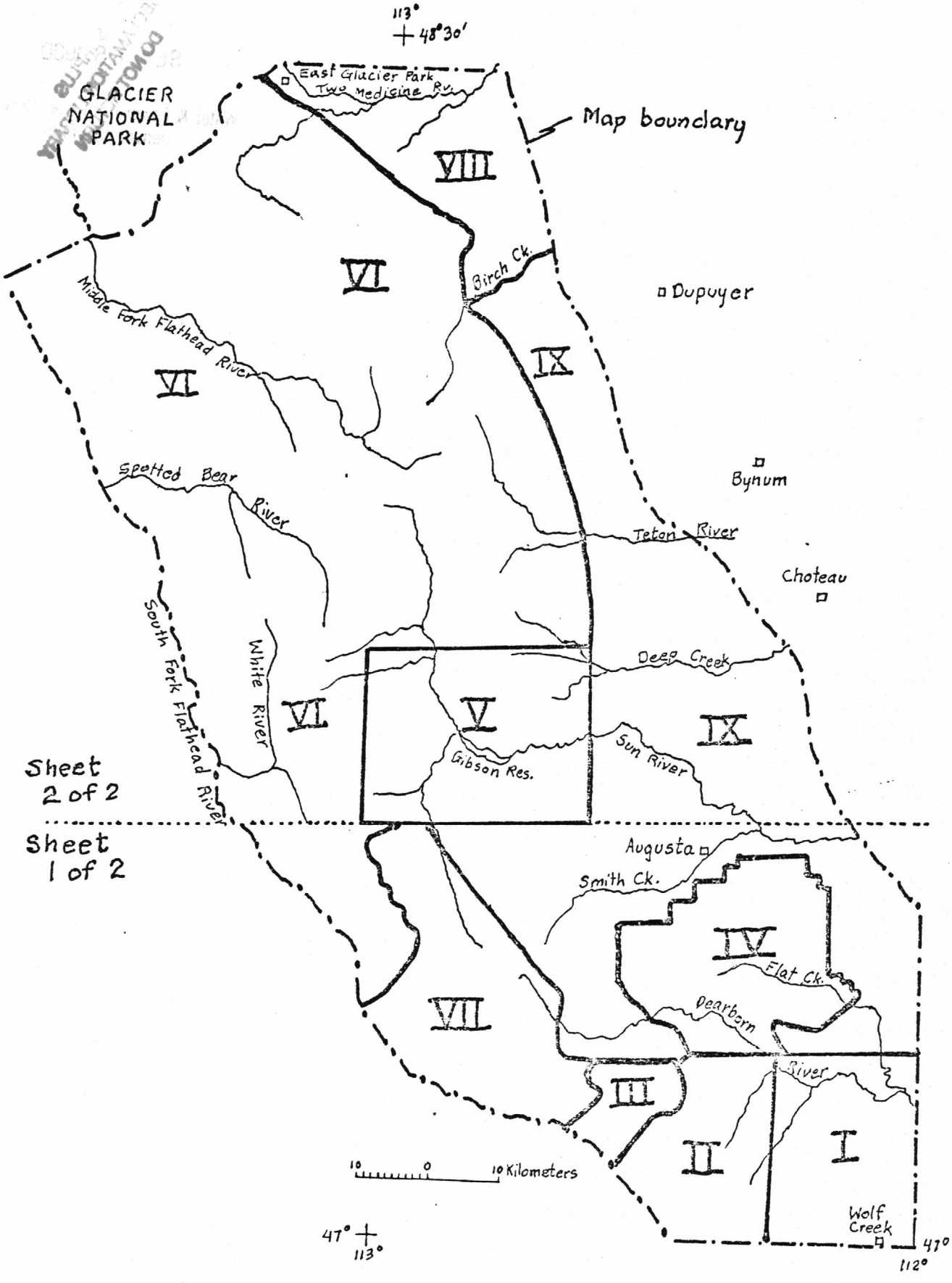

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